**PROJECT NUMBER:** 1307
**PROJECT TITLE:** Reconstituted Tobacco Development
**PROJECT LEADER:** R. G. Uhl
**PERIOD COVERED:** February, 1988

## I. IMPROVED SHEET PROPERTIES

A. **Objective**: Improve the physical characteristics and blend performance of reconstituted sheet materials.

B. **Results**:

1. ART Project - ART #54 and #57 shredded stems (thin lamina filler extraction) incorporated into RL, as well as direct inclusion models of #57 and #59 (CRS/cut strip filler), gave a more intense hot/harsh subjective response in Marlboro blends than have previous ART stems. Current efforts are focused on the evaluation of ART #87 and #88 CRS (from the extraction of the DL lamina blend) via both direct inclusion and incorporation in RL.

   A program has been initiated to evaluate the microbial storage stability of pre-ART and post-ART stems.

   A second Semiworks study is in progress to determine cigarette-to-cigarette blend variation with ES, IS and shredded stems using ethyl paraben as a tracer. This will be completed in March.

   Pilot and handsheet studies with added citrate indicate that incorporating ART stems in RL will give a 10% loss in tensile strength. Drainage characteristics emulate a more refined stock, i.e., drainage rates are lower but couch roll vacuum, and therefore sheet dryness, are higher. These effects are equivalent to a 1-2% increase in baseweb solubles.

2. Humectants - Glycerin-free RCB test sheets, including versions with 2% and 4% PG plus controls, were remade at the BL Plant. Machine-made 100% cigarettes are being subjectively screened.

   Production RCB and RL test sheets containing potassium propyl paraben were judged subjectively equivalent to controls. The production of PG/glycerin-free sheet materials using isosweet and potassium propyl paraben are tentatively scheduled for the end of March.

3. RL - Quaker #2052 Yankee dryer release agent (carbowax) has exhibited the best performance from both a process and subjective standpoint. Additional long term trials for subjective testing have been completed.

   Licorice extract added to pilot baseweb (0.5%) showed no improvement in size absorption. An increase in absorption had been indicated by handsheets.

C. **Plans**:

1. Complete subjective comparison of ART CRS and SS (DL filler extraction) by direct stem inclusion and incorporation in RL.

2. Complete the cigarette-to-cigarette blend variation study with stem products.

II. **SUBJECTIVE MODIFICATION OF RL**

A. **Objective**: Improve or modify the subjective character of RL.

B. **Results**:

1. Pilot 150B sheets were completed to qualify alternate suppliers for dry flavor replacements. Subjective screening of 100% sheet cigarettes is completed; blended cigarettes are scheduled for Semiworks.

2. No additional POL testing will be conducted with the existing Park 500 Modified 150B test sheet. Efforts are directed at evaluation of ultrasonic devices to reduce the particle size of precipitated phosphates and eliminate size press nip rejection. If successful this would necessitate a demonstration trial at Park 500, with subsequent subjective evaluation of this new test sheet.

C. **Plans**:

1. Complete subjective blend evaluation to qualify alternate suppliers for dry flavor replacements.

2. Select ultrasonic equipment for pilot trials to reduce the particle size of phosphate precipitates.